DETAILED ACTION

1. The amendment filed 04/27/09 have been entered and made of record.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Mark Steinberg on May 5, 2009.

3. The application has been amended as follows:

IN THE CLAIMS

Claims 16-24 replace "(withdrawn)" by --- (Cancelled) ---;

IN THE SPECIFICATION

After the paragraph at page 11, lines 8-12, insert the following paragraphs:

-- According to some embodiments, an article, comprises: a storage medium having stored thereon instructions that when executed by a machine result in the following: receiving at a processing element a request to transmit a packet associated with a packet identifier; determining a number of transmit buffers to be associated with the packet; and arranging for the packet to be transmitted

through a port without storing the packet identifier in a local transmit queue if the number of transmit buffers does not exceed a pre-determined threshold.

According to some embodiments, an article comprises: a storage medium having stored thereon instructions that when executed by a machine result in the following: receiving at first thread in a first processing element a request to transmit a packet; determining a size of the packet; and arranging for the first thread to provide requests to transmit multiple sub-packets if the size of the packet does not exceed a pre-determined threshold, wherein the requests are provided to a second processing element.

According to some embodiments, an article comprises: a storage medium having stored thereon instructions that when executed by a machine result in the following: receiving at a second processing element requests to transmit multiple sub-packets, the requests being received from a first thread executing at a first processing element; and arranging for the sub-packets to be transmitted through a port using a transmit buffer for each sub-packet. ----;

Allowable Subject Matter

4. Claims 1-3, 5-9, 10-11, 13-14, 25-26, 29 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Claim 1 is allowed. Tsao et al. (Patent No.: US 7,236,491 B2) disclose receiving at a processing element a request to transmit a packet associated with

a packet identifier (col. 3, lines 35-40, packet identifier = identification of flow) (col. 2, lines 16-20, receiving a packet, identifying a flow for the packet) ; determining a number of transmit buffers (figure 4, queues 112 (1) ... 112 (n)) to be associated with the packet (col. 18, lines 23-26 claim 1, based on the size of packet, processing said packet in the number of queues) (col. 3, lines 35-40, retrieves the identification of flows and determines the number n and identification of flow queues 112 (1) and 112 (n)).

Katayama et al. (Pub. No.: US 2003/0204653 A1) teach or suggest arranging for the packet (notified packet) to be transmitted through a port without storing the packet identifier in a local transmit queue if the number of transmit buffers does not exceed a predetermined threshold (figure 1, paragraph [0044] if the amount of the buffer 1 does not exceed a threshold associated with a priority...the received data item 5a, 5b having priority A and B are discarded without being stored in the buffer 1) (paragraph [0060] when the packet belonging a priority which is not allowed to be stored, the data transfer circuit 130 notify the reception interface by sending the notified packet through a port).

The prior art however fails to disclose evaluating a status of the port associated with the packet, wherein it is arranged for the packet to be transmitted without storing the packet identifier in the local transmit queue only if (i) the number of transmit buffers does not exceed the pre-determined threshold and (ii) the port is available to transmit the packet.

Claim 10 is allowed. Tsao '491 disclose receiving at a processing element a request to transmit a packet associated with a packet identifier (col. 3, lines 35-40, packet identifier = identification of flow) (col. 2, lines 16-20, receiving a packet, identifying a flow for the packet) ;
determining a number of transmit buffers (figure 4, queues 112 (1) ... 112 (n)) to be associated with the packet (col. 18, lines 23-26 claim 1, based on the size of packet, processing said packet in the number of queues) (col. 3, lines 35-40, retrieves the identification of flows and determines the number n and identification of flow queues 112 (1) and 112 (n)).

Katayama '653 teach or suggest arranging for the packet (notified packet) to be transmitted through a port without storing the packet identifier in a local transmit queue if the number of transmit buffers does not exceed a predetermined threshold (figure 1, paragraph [0044] if the amount of the buffer 1 does not exceed a threshold associated with a priority...the received data item 5a, 5b having priority A and B are discarded without being stored in the buffer 1) (paragraph [0060] when the packet belonging a priority which is not allowed to be stored, the data transfer circuit 130 notify the reception interface by sending the notified packet through a port).

The prior art however fails to disclose evaluating a status of the port associated with the packet, wherein it is arranged for the packet to be transmitted without storing the packet identifier in the local transmit queue only if (i) the number of

transmit buffers does not exceed the pre-determined threshold and (ii) the port is available to transmit the packet.

Further with regards to claim 10, Examiner has reviewed the Application's specification (page 6, lines 14-16) and interpreted the "A storage medium" to be one of the memory as DRAM, CDROM, etc.; Therefore, claim 10 is statutory under 35 USC 101.

Claim 13 is allowed. Tsao '491 disclose receiving at a processing element a request to transmit a packet associated with a packet identifier (col. 3, lines 35-40, packet identifier = identification of flow) (col. 2, lines 16-20, receiving a packet, identifying a flow for the packet) ;
determining a number of transmit buffers (figure 4, queues 112 (1) ... 112 (n)) to be associated with the packet (col. 18, lines 23-26 claim 1, based on the size of packet, processing said packet in the number of queues) (col. 3, lines 35-40, retrieves the identification of flows and determines the number n and identification of flow queues 112 (1) and 112 (n)).

Katayama '653 teach or suggest arranging for the packet (notified packet) to be transmitted through a port without storing the packet identifier in a local transmit queue if the number of transmit buffers does not exceed a predetermined threshold (figure 1, paragraph [0044] if the amount of the buffer 1 does not exceed a threshold associated with a priority...the received data item 5a, 5b having priority A and B are discarded without being stored in the buffer 1) (paragraph [0060] when the packet belonging a priority which is not allowed to be

stored, the data transfer circuit 130 notify the reception interface by sending the notified packet through a port).

The prior art however fails to disclose wherein the processing portion arranges for the packet to be transmitted through the port without storing the packet identifier in the local memory_ portion only if (i) the number of transmit buffers does not exceed the pre-determined threshold and (ii) the port is available to transmit the packet

Claim 25 is allowed. Marshall et al. discloses a backplane (figure 2, backplane 220); a first line card (figure 2, line cards 400a, 400b, 400c connected to the backplane 220); and a second line card (figure 2, line cards 400a, 400b, 400c connected to the backplane (220), the second line card including a processing element (figure 4, classification engine 500) having: an input path (figure 4, input interface 420) to receive a request to transmit a packet associated with a packet identifier ([0011], information associated with a packet, e.g., a virtual local area network (VLAN) identifier (ID) and/or destination port ID, is provided to an initial classification stage of a classification engine which generates a criterion, e.g., a packet field, and a rule associated with the packet); a local memory portion (figure 4, queuing logic 440)

Determining a number of transmit buffers ([0012], queue ID, The VLAN ID and destination port ID information associated with the packet are applied to the VLAN and port/channel tables, respectively, to generate a set of queue ID base pointers, packet field values, packet field valid values, and rules) ([0013],

Information contained in the selected final state table entry is combined with the queue ID base pointers to generate the identifier, i.e., a queue ID, associated with the classified packet) ([0040], The classification engine 500 processes the packet including classifying the packet and determining a queue ID of a calendar queue 442 associated with the classified packet. The queue ID is transferred to the queuing logic 440 which selects a calendar queue 442 associated with the queue ID and places information associated with the packet (e.g., a pointer to the packet in buffer 450) on the selected queue 442. When the information associated with the packet reaches the head of the selected queue 442, the queuing logic 440 transfers the packet from buffer 450 to the output interface 430 where it is transferred out the destination port 217, associated with the destination port ID, onto the network) (see figure 4); arranging for the packet to be transmitted through a port (figure 4, output interface 430).

Katayama '653 teach or suggest arranging for the packet (notified packet) to be transmitted through a port without storing the packet identifier in a local transmit queue if the number of transmit buffers does not exceed a predetermined threshold (figure 1, paragraph [0044] if the amount of the buffer 1 does not exceed a threshold associated with a priority...the received data item 5a, 5b having priority A and B are discarded without being stored in the buffer 1) (paragraph [0060] when the packet belonging a priority which is not allowed to be stored, the data transfer circuit 130 notify the reception interface by sending the notified packet through a port).

The prior art however fails to disclose wherein the processing portion arranges for the packet to be transmitted through the port without storing the packet identifier in the local memory_ portion only if (i) the number of transmit buffers does not exceed the pre-determined threshold and (ii) the port is available to transmit the packet

Claim 29 is allowed. The prior art fails to disclose determining if the local transmit queue is empty, wherein it is arranged for the packet to be transmitted without storing the packet identifier in the local transmit queue only if (i) the number of transmit buffers does not exceed the pre-determined threshold and (ii) the local transmit queue is empty.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571)272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EDAN ORGAD can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ch.
05/04/09

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2419